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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,921

05/09/2005

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18871

1792

23389 7590 11/23/2010
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EXAMINER

CATTUNGAL, SANJAY

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

11/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,921	Applicant(s) GONO, KAZUHIRO	
	Examiner SANJAY CATTUNGAL	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 5-27 is/are pending in the application.
- 4a) Of the above claim(s) 19-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2, 5-7, 11, and 12, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Publication No. 2003/0191368 U. S. Application No. 10/393,028 to Wang et al.**

3. Regarding **Claims 1 and 11**, (112 6th Paragraph –Means Plus Function- has been invoked)

4. Wang teaches an imaging apparatus, comprising: a light source device (Fig. 5 element 64); an image pickup device for converting a living body observed image by using light irradiated from the light source device for observation (fig. 5 element 72); and a processor for generating a living body image from the images, wherein the processor has means for generating a living body image having at least a scattering feature of a living body tissue as image information (Fig. 5 element 48) wherein the image represents a degree of nucleus change in diameter (fig. 4; paragraph 0076; and paragraph 0079); wherein light source irradiates a plurality of band light beams in blue

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light by switching to a field sequential light (paragraph 0105 teaches excitation at 407 nm and 413 nm which are both blue light).

5. Regarding **Claim 2**, Wang teaches that the image pickup device is an endoscope (abstract).

6. Regarding **Claim 5**, (112 6th Paragraph –Means Plus Function- has been invoked)

7. Wang teaches that the processor has means for estimating (fig. 5 element 44 and 48), from at least one living body image, spectrums corresponding to positions and/or an area in the image (paragraph 0076; and paragraph 0079).

8. Regarding **claim 6**, Wang teaches that the means for estimating the spectrum have at least one matrix computer (fig. 5 element 44).

9. Regarding **claim 7**, Wang teaches using distinct wavelengths paragraph 0105) and scattering coefficients to determine spectrums (paragraph 0052).

10. Regarding **Claim 12**, (112 6th Paragraph –Means Plus Function- has been invoked)

11. Wang teaches means for generating color image (paragraph 0132) absorption feature of living tissue (paragraph 0132).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a

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person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2003/0191368 U. S. Application No. 10/393,028 to Wang et al. in view of U. S. Patent No. 6,697,652 to Georgakoudi et al.**

14. Regarding Claim 8, Wang teaches all of the above claimed limitations but does not expressly teach the use of light propagation model for expressing propagation of light in a scattering medium.

15. Georgakoudi teaches a light-scattering-model analysis (fig. 8 which is a light propagation model analysis).

16. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang to use light propagation model as taught by Georgakoudi since such a setup would result in faster processing as modeling helps with faster data analysis.

17. Regarding **Claim 9**, (112 6th Paragraph –Means Plus Function- has been invoked)

18. Georgakoudi teaches means for estimating (fig. 1 element 32 and 34), scattering feature to determine position (claim 1 teaches using scattered spectrum to determine size of structure within a tissue, which is a position in a target cell).

19. Regarding **Claim 10**, (112 6th Paragraph –Means Plus Function- has been invoked)

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20. Georgakoudi teaches scattering has means for projecting (fig. 1 element 32 and 34), at least one vector in a spectrum space (fig. 6 teaches projected properties of tissue, as a function of wavelength, based on scattering properties of tissue).

21. **Claims 17 and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2003/0191368 U. S. Application No. 10/393,028 to Wang et al. in view of U. S. Patent No. 6,293,911 to Imaizumi et al. further in view of U. S. Patent No. 6,161,031 to Hochman et al.**

22. Regarding Claims 17 and 18, Georgakoudi and Imaizumi teach all of the above claimed limitations but do not expressly teach the use of spatial frequency filtering being done by the processor means.

23. Hochman teaches spatial frequency filtering being done by image processor to smooth out the image (col. 21 lines 7-13).

24. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Georgakoudi and Imaizumi with spatial frequency filtering as taught by Hochman since such a setup would result in smoothing out the image and reducing noise (col. 21 lines 7-10).

25. **Claims 13-16, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2003/0191368 U. S. Application No. 10/393,028 to Wang et al. in view of U. S. Patent No. 6,293,911 to Imaizumi et al.**

26. Regarding Claims 13-15, Wang teaches all of the above claimed limitations but does not expressly teach a continuous display of scattering and other images being displayed simultaneously or in a switching manner.

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27. Imaizumi teaches means for generating color image (fig. 1 element 54) and scattering image being displayed simultaneously (col. 45 lines 62-65, wherein fluorescence image is a scattering image).

28. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Georgakoudi to use video signal to display scattering as taught by Imaizumi since such a setup would result in a continuous display of the scattering as such the results could be viewed more quickly/efficiently, moreover use of color images would help in distinguishing between different tissue as such would result in precise diagnosis.

29. Regarding **claim 16**, Imaizumi teaches generating a normal light image, under illumination of white light (col. 45 lines 62-65, light source is a white light as define by wavelengths in fig. 2).

Response to Arguments

30. Applicant's arguments with respect to claims 1, 2, and 5-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANJAY CATTUNGAL whose telephone number is (571)272-1306. The examiner can normally be reached on Monday-Friday 9-5.

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32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANJAY CATTUNGAL/
Examiner, Art Unit 3768